

Module 3 – Medications used in Alzheimer Dementias and Tips on Administering Medications

Purpose: To introduce patients and families to the basics of pharmacotherapy for Alzheimer's disease

Medication use in people with dementia

Introduction

At this time there are no medications that will reverse the symptoms or cure Alzheimer's disease and most other dementias, however the issue of medications is critical when a person has Alzheimer's disease or a related dementia. First, many people with dementing illnesses become more sensitive to medications. Second, because of the memory loss and altered judgment associated with dementing illnesses, people tend to make errors in medication taking. The following module describes issues with administering medications and the common medications given to people with Alzheimer's disease.

Increased sensitivity

The reason why people have memory loss and other symptoms in dementia is because a disease is attacking the brain and killing the brain cells. Because the brain is damaged by the disease, any medication that affects the brain has the potential for an unintended effect. Thus, the brain cells the medication is intended for are either dead or the remaining cells may become increasingly sensitive to the medication. Some other medications do not affect the brain, but affect organs that support the brain, especially the liver. So, there may be an untoward effect of any medication the person is taking that affects the brain.

Medications, both prescribed and over-the-counter, that may cause problems include the following:

- Cold, allergy, and sinus preparations,
- Some blood pressure medications,
- Any medication that causes dry mouth,
- Some glaucoma medications,
- Sleeping preparations,
- Muscle relaxants, antidepressants,
- Medications for anxiety and tranquilizers,
- Some herbal preparations/medications including aloe vera, melatonin, and St. John Wort,
- Antacids
- Certain skin creams
- Recreational or illicit drugs
- Alcohol

The risk is even higher when a person takes two or more medications and supplements. Care must be taken to coordinate all medications, dietary supplements, herbal

preparations, over-the-counter medications with your doctor and, more important, your pharmacist. Most pharmacies not have computer programs that warn of drug and food interactions. This is an invaluable resource when trying to do the best thing for the person with dementia.

A second issue is the concern about the “combination” supplements. There are many companies that develop and sell products that are supposed to “help with memory,” “treat memory loss,” “enhance brain circulation,” “prevent Alzheimer’s disease,” “enhance brain circulation,” etc. Most of these products contain a variety of vitamin, mineral, and herbal ingredients along with chemicals known as “binders.” Some of these preparations claim to have been used a long time successfully in other countries. Others state they have “proven research,” suggesting there is a conspiracy among traditional western medical doctors to prevent Alzheimer’s disease from being cured. When you look at the “research” often it is simply testimonials from “satisfied customers,” not the controlled clinical trials required of labeled medications.

As consumers of these and other over-the-counter products there are several things you need to know:

- At this time there are no dietary supplements or “natural products” that will reverse the symptoms or cure Alzheimer’s disease and other dementias
- There is no difference between medications and herbal and dietary supplements in terms of safety. Most medications have been developed from herbs, so herbs are really medications in disguise. You must expect the same issues with side-effects as you would with any medications.
- The Food and Drug Administration does not regulate nutritional supplements and herbal preparations. Thus there is no mandate to prove the claims of the advertising.
- Also, there have been problems with the binding agents in some supplements. There have been reports of binders causing other diseases or being laced with drugs that would give the consumer a sense of euphoria.
- Herbal preparations may vary greatly – even from a single company – from year to year depending on the growing season, rainfall, soil quality, and processing.

To avoid problems with dosage, ask your pharmacist for herbal preparations that are “Pharmacy Grade.”

Finally, you must understand that there is no such thing as a totally safe medication, over-the-counter medications, dietary supplement, or herbal medication. Common symptoms of medication interactions might include the following:

- Increased confusion
- Sleepiness
- Restlessness, agitation, edginess, pacing
- Tremor or a Parkinson’s-like appearance
- Generalized (whole body) weakness
- Dizziness, spells (especially a few minutes after rising to a stand)
- Falling and unsteady walk

- Nausea, vomiting
- Diarrhea or constipation
- Rash

If ANY change is noted when starting any preparation or over the course of taking it, check with the person's prescriber before stopping anything.

NOTES:

Key Points to Understanding Medications
<ol style="list-style-type: none">1. There is currently no drug, supplement, or herbal preparation to reverse the symptoms of or cure Alzheimer's disease2. There is no such thing as a safe drug, over-the-counter medication, dietary supplement or herbal preparation

Medications for Alzheimer's disease and related dementias

Introduction

In the past decade we have seen the use of the first medications targeted for use in Alzheimer's-type dementias. Prior to that all medications used were given primarily to control mood issues such as depression, agitation, or aggression. In January 1997 the Food and Drug Administration allowed for the use of Donepezil (Aricept). Since then four other drugs have been approved. This module will briefly discuss the types of medications used, how they are dosed, common side effects, how to evaluate whether they are effective, and some considerations before stopping them. In addition some basics of medication use in people with dementia will be described and some cautions on dietary supplements.

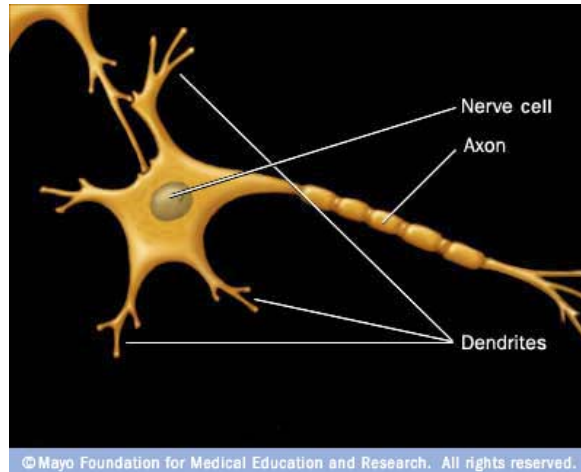
Because of the rapid growth in the areas of all medications and supplements, we intend to update this module at least annually. The module you are currently reading was written in Spring, 2007. For questions about newer medications for Alzheimer's disease, check with the Banner Alzheimer's Institute staff. For concerns about how these medications or dietary supplements might interact with your current medications, check with two sources: 1) your pharmacist; and 2) the provider who prescribed the medications.

Medications Approved to Treat Alzheimer-type dementias

There are two groups of medications currently approved for the treatment of Alzheimer's disease. Neither will cure Alzheimer's disease. There is considerable debate about whether they slow the actual disease. These medications act on the "neurotransmitter systems" in the brain.

How the brain works

Very simply, the brain is a group of different organs, each with its own special function such as understanding language, sensing or moving a particular part of the body. These organs get receive and send information working much like electrical systems. Information moves from organ to organ in the form of electrical impulses sent from nerve cell to nerve cell. At the end of each nerve cell a temporary substance, called a neurotransmitter is produced to create a pathway for the impulse to cross from one cell to another. After the impulse passes, the neurotransmitter substance is destroyed. The following picture shows a nerve cell. The impulse is received by the dendrite and is sent along the cell to the axon where the neurotransmitter is produced. The impulse then is passed to the next dendrite. Where the process starts all over.



In most dementias the brain (nerve cells) works more slowly. Thus the neurotransmitter may be destroyed before the impulse can cross the cells to deliver the information adequately. Very basically, the current medications are used to hold the neurotransmitter at the end of the cell just a bit longer before it is destroyed, making the brain work more efficiently.

- **The cholinesterase inhibitors** (Also known as “cholinergics”) – There are currently three medications approved in this category. One of these medications is prescribed as soon as any memory loss is diagnosed. As a general rule, the drug is continued until the person is no longer able to swallow. Both the trade and generic names are given for each drug:
 - Aricept (donepezil) – The starting dose is 5 mgs per day for one month. The dose is then increased to 10 mgs.
 - Exelon (rivastigmine) - The starting dose is 1.5 mgs twice a day. After one month it is increased to 3 mgs twice a day. If the person is able to tolerate it, Exelon can be increased slowly to 6 mgs twice a day, however many people are unable to tolerate the higher doses due to stomach upset.
 - Razadyne (galantamine HCl) – Recommended dose starts at 4 mgs twice a day for one month and then increases to 8 mgs, twice a day. The medication can be increased to 12 mgs twice a day, however additional benefits may not be realized and the side-effects increase.
 - Razadyne ER (galantamine HCl extended-release capsules) – Because many people with dementia have difficulty remembering to take medications twice a day; Razadyne now comes in an extended-release form. The recommended starting dose for Razadyne ER is 8 mgs per day. That is increased to 16 mgs per day.
 - Only one of these three medications is given at a time. Thus people with dementia may be on either Aricept or Exelon, or Razadyne, not two or more at the same time.

- If the person develops side-effects with one of the cholinergic medications, switching to another may eliminate the side-effects. People with dementia are so different from each other, there is no way to predict which person will develop side effects from any of the medications. The good news is that dosage adjustments or changing to another medication may rid the person of the problem effects.
- As a general rule the cholinesterase inhibitors are well tolerated. The chief side-effect is nausea (about 13%-24%) so the medications are given with a meal. Some people also experience mild diarrhea (about 9%) when they first start the medication. As a rule the side-effects subside after a few days. If this does not happen the dose can be decreased for a week or so and then raised again. Another relatively common side-effect is nightmares so the drugs should not be given at bedtime.
 - Less side-effects include vomiting (6%-13%), loss of appetite (7%), weight loss (5%); fatigue (5%), fainting (2%) or dizziness (9%)
 - Another common finding is that people on cholinergic medications may develop a runny nose.
- Care must be taken in some individuals with a particular type of heart disease; having general anesthesia; gastric disorders; and seizures. Check with your primary care physician regarding any potential problems.
- What we expect to see when someone takes the cholinesterase inhibitors:
 - Most people do not show improvement, although some may have an increase in general awareness or ability to participate socially.
 - Many people have prolonged periods of stability in their day to day function
 - It may or may not affect performance on the mental status examinations.
 - It generally helps to prevent and/or treat psychotic behavioral symptoms such as hallucinations, delusions (fixed false beliefs), and paranoid ideas.
- When stopping the cholinergics, your provider will tend to decrease the dose by half every week or so until there is no more drug to give. This helps to determine whether or not the drug was helping. If the person has a sudden decline when the drug is tapered or stopped, the dose should be gradually increased again until full-strength is reached.
- **Namenda (memantine HCl)** – Namenda is an NMDA receptor agonist and is approved for the treatment of moderate to severe dementia. Namenda is most effective if given with one of the cholinergic medications, Aricept, Exelon, or Razadyne. However, if the person is unable to tolerate the cholinergic medications, Namenda may be given by itself.
 - The starting doses of Namenda are often administered using a starter pack. The dose schedule is as follows:
 - First week, one 5 mg tablet each day
 - Second week, one 5 mg tablet morning and evening

- Third week, a 10 mg tablet in the morning and a 5 mg tablet at bedtime
 - Fourth week, a 10 mg tablet morning and evening.
- Because Namenda is used with people in the later stages of the disease, a liquid form is available.
- In studies with Namenda alone, about 29% of people showed improvement in symptoms such as behavior, attention, language, memory, orientation, social interaction and activities of daily living.
- When Namenda was added to people already on a cholinergic medication, people showed major improvement over when they were on the cholinergic alone.
- Namenda has also been shown to reduce the number of hours caregivers work. A decrease of 45.8 hours a month was recorded in the study of Namenda alone. Full effect may take anywhere from 4 to 8 weeks. Some patients have improved and progression of the disease slowed.
- Side effects include the following:
 - Serious enough to call the doctor: agitation, restlessness, confusion (6%, usually transient), dizziness, hallucinations (3%), high blood pressure (4%), not being able to hold urine, swelling in the throat, rash, or vomiting (3%).
 - Milder side-effects not requiring a medical visit unless they persist include constipation (5%), mild diarrhea, insomnia, drowsiness, feeling of nausea, upset stomach, fatigue (2%), or headache (6%).
- Namenda should not be given to people with seizures or kidney disease
- Namenda may interact with the following medicines. A pharmacist should be consulted before combining these with Namenda:
 - Medicines for colds, flu, hay fever, or other allergies (antihistamines)
 - Amantadine or other NMDA receptor antagonists
 - Drugs that are excreted through the kidneys such as: hydrochlorothiazide, triamterene, cimetidine, ranitidine, quinidine, and nicotine.
 - Sodium bicarbonate

Source: http://alzonline.phhp.ufl.edu/en/reading/mmi_namenda.php

Medications for Mood

There are several reasons why someone with a dementing illness might be on a medication for mood. These medications are given only as the need arises and are rarely used indefinitely. Common classes of mood-controlling medications include the following:

- Antidepressants – Most people with dementia are aware of their losses much of the time. Families can not hide the fact of the disease from the person with

- dementia. The person also experiences losses of cherished activities and may express frustration with declining abilities. Most depression in people with memory loss is treated with antidepressants.
- Talk therapies are usually not covered by Medicare and are less successful in people with memory loss.
 - Older adults generally benefit from talk therapies after they have been taking an antidepressant for several weeks. Two types have shown limited benefit
 - Brief Cognitive Therapy
 - Group therapy
 - Antidepressants have relatively few side-effects however each has a slightly different mode of action. Thus it may take trying a few different medications before finding one that is best for the person. Antidepressants may help with the following symptoms: depression; anxiety; insomnia, restlessness, crying, agitation, increased sexuality, and loss of appetite. The person with dementia and their family must work with the prescriber until they desired results are achieved.
 - There are five important considerations when using antidepressants:
 - **The antidepressants must be taken every day as prescribed.** Given sporadically or stopping and starting the medication may prevent any relief from depression
 - **The antidepressants take three to four weeks before they reach a therapeutic state.** So, families expecting quick results will be disappointed if they don't have the person keep taking the drug.
 - **Antidepressants should be taken exactly as prescribed.** If more than the prescribed dose is taken, the person can become toxic.
 - **Some antidepressants will interact with “natural” remedies and produce a toxic reaction.** Care must be taken with dietary supplements and other drugs, especially St. John's Wort as it contains similar compounds to the antidepressant. Your pharmacist can help to determine if the antidepressant will interact with other medications and supplements
 - **Antidepressants must never simply be stopped as the person can suffer a type of withdrawal.** It is important to coordinate how to stop the medication with the prescriber. As a general rule the antidepressants should always be tapered slowly when stopping them.
 - Drugs for anxiety – These are called “anxiolytics” Anxiety is a general feeling of fear of the unknown. It is not uncommon in dementing illness and is often related to depression. Treating anxiety is tricky because many of the medications used in younger people with anxiety cause harmful side-effects in older adults, especially those with dementia.
 - The primary medications used for anxiety in people with dementia are the antidepressants. While they take a while to become effective, several antidepressants target anxiety. These can be quite effective.

- A secondary class of medications are called the “benzodiazepines.” These drugs include Valium (diazepam), Ativan (lorazepam), Xanax (alprazolam). These drugs also relax muscles.
 - Adverse effects are common with these medications including
 - Excessive sleepiness, dizziness, and falls related to sedation
 - Rebound effects – where the person’s symptoms are much worse when the medication begins to wear off
 - Paradoxical effects – when the person has the opposite effect of the one intended
 - So, as a general rule the **benzodiazepines are not recommended** for people with dementia except for the following:
 - Single uses for a procedure such as a dental visit or procedure such as an MRI (brain scan)
 - Occasional uses such as traveling on an airplane (the caregiver would always want to give a trial dose at home before using it in a stressful situation.
 - People who have anxiety less than once or twice a week.
- Antipsychotics – Also known as “major tranquilizers,” these medications are potent and must be used with great care and only after all other interventions and medications have been exhausted. The person taking an antipsychotic must be monitored closely by the prescriber. There is a Federal warning for use of antipsychotics in people with dementia. In many dementia-specific medical practices fewer than 10% of people with require treatment with antipsychotics. Antipsychotics are given for the following reasons:
 - Psychosis – The person is seeing things, hearing things, is severely paranoid, or has fixed false beliefs that produce agitation and/or aggression
 - Severe agitation that does not resolve with environmental or other medical measures
 - Aggression that is not related to personal care. Violence
 - Occasionally a mild antipsychotic may be given for 2-3 weeks to ease relocation to a facility or during a move. The person can be placed on the lowest available dose one week prior to a move. About one to two weeks after the move the medication is withdrawn.
 - Like the antidepressants, antipsychotics take several weeks to reach their therapeutic levels. However, some people – especially those with agitation – will become very sleeping the first 48-72 hours of administration. If this happens call the prescriber for a dose adjustment. Many times the sleepiness wears off after a few days but your prescriber will want to know of the side-effect and manage the dose accordingly.
 - Antipsychotics do NOT help with the following behaviors
 - Excessive sexuality
 - Crying
 - Wandering
 - Eloping
 - “Shopping”

- Spontaneous vocalization (yelling or screaming)
- People placed on antipsychotics should be monitored for the following. If abnormalities occur contact the prescriber. With involuntary movements the physician must be contacted within a day or two. With fever the physician or an emergency room should see the person as soon as possible.
 - Weight gain
 - Blood pressure: lying, sitting, and standing
 - Heart rate
 - Falls, especially after rising from a lying or seated position.
 - Excessive sleepiness
 - Tremor in their tongue or hands
 - Involuntary movement of mouth
 - Fever

NOTES:

Key Points to Understanding Common Medications used in Alzheimer's dementias

3. There is currently no drug to reverse the symptoms of or cure Alzheimer's disease
4. There are two types of drugs approved to treat memory loss
 - a. The cholinergics are given as soon as memory loss is detected and include Aricept, Exelon, and Razadyne. People should only take one of these medications
 - b. Namenda is a supplemental medication that is approved for moderate-to-severe dementia. It is usually given with a cholinergic, however may be given alone if the person is unable to tolerate any of the cholinergics
5. Medications may also be given to help with mood for the following reasons:
 - a. Depression
 - b. Anxiety
 - c. Severe agitation, aggression, or violence
 - d. Psychosis, hallucinations, illusions, fixed false beliefs, severe paranoia
6. Mood-altering medications are a bit tricky to prescribe and often take several weeks to see the real effects of the medication
7. All of the medications given for memory loss or mood tend to be introduced at low doses and increased slowly. When stopping them, we tend to taper rather than discontinuing the medication
8. Some antidepressants interact with dietary supplements and herbal preparations. Check with your pharmacist before combining anything.